

AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

LISTING OF CLAIMS:

1. (currently amended) In a computer network having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of said DDB in each of said plurality of nodes consistent throughout said plurality in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, a system for resolving conflict in said network between said first master node and said second master node comprising:

means for establishing a standard for comparison between said first master node and said second master node;

means for comparing said first master node against said second master node in accordance with said standard to obtain comparison results; and,

means for selecting said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.

2. (original) The system of claim 1 and further comprising:

means for demoting the remaining node in said group to non-master node status as a participating node in said plurality of nodes.

3. (original) The system of claim 1 and wherein said comparison standard establishing means establishes a temporal standard.

4. (previously presented) The system of claim 3 and wherein said comparing means comprises:

means for choosing between said first master node and said second master node if said first master node and said second master node were selected simultaneously; and,

means for determining which one of said first master node and said second master node was most recently selected to obtain a most recently selected master node if said first master node and said second master node were not selected simultaneously.

5. (previously presented) The system of claim 4 and wherein said choosing means includes IP means for picking said first master node if the IP address of said first master node is lower than the IP address of said second master node and vice versa.

6. (previously presented) The system of claim 4 and wherein said determining means comprises means for picking said most recently selected master node as said master node.

7. (previously presented) The system of claim 6 and wherein said picking means comprises:

first means for determining when said first master node was selected master of said network to obtain a first time of selection;

second means for determining when said second master node was selected said master of said network to obtain a second time of selection;

third means for comparing said first time with said second time to obtain said most recently selected master node; and,

fourth means, responsive to operation of said third means, for allowing said most recently selected master node to be said master node and for demoting other than said most recently selected master node to non-master-node status as a participating node in said plurality of nodes.

8. (previously presented) The system of claim 7 and wherein said first means comprises:

fifth means, included within said first master node for recording first master node local time of selection of said first master node as said master node as recorded said first time of selection, for measuring duration of said selection of said first master node to obtain a first selection duration, and for communicating said first selection duration to all other of said nodes in said plurality.

9. (previously presented) The system of claim 8 and wherein said second means comprises:

sixth means, included within said second master node for recording second master node local time of selection of said second master node as said master node as recorded said second time of selection, for measuring duration of said selection of said

second master node to obtain a second selection duration, and for communicating said second selection duration to all other of said nodes in said plurality.

10. (previously presented) The system of claim 9 and wherein said third means comprises, for and within each one of said plurality of nodes other than said first master node and said second master node:

seventh means, for noting local time of receipt of communication of said first selection duration and for subtracting said first selection duration from said local time of receipt of said first selection duration to obtain first adjusted local time;

eighth means for noting local time of receipt of communication of said second selection duration and for subtracting said second selection duration from said local time of receipt of said second selection duration to obtain second adjusted local time;

ninth means for comparing said first adjusted local time and said second adjusted local time to determine most recent adjusted local time; and,

tenth means for identifying either said first master node or said second master node associated with said most recent adjusted local time.

11. (previously presented) The system of claim 10 and wherein said third means further comprises:

eleventh means located within said first master node comprising;

twelfth means for noting local time of arrival of said second selection duration and for subtracting said second selection duration therefrom to obtain first master node adjusted competitive local time;

thirteenth means for comparing said first master node adjusted competitive local time with said first master node local time of selection to obtain a first most recent selection time; and,

fourteenth means for identifying either said first master node or said second master node associated with said first most recent selection time.

12. (previously presented) The system of claim 11 and wherein said third means further comprises:

fifteenth means located within said second master node comprising;

sixteenth means for noting local time of arrival of said first selection duration and for subtracting said first selection duration therefrom to obtain second master node adjusted competitive local time;

seventeenth means for comparing said second master node adjusted competitive local time with said second master node local time of selection to obtain a second most recent selection time; and,

eighteenth means for identifying either said first master node or said second master node associated with said second most recent selection time.

13. (previously presented) The system of claim 12 and further comprising:

summation means, operative with said tenth means, said fourteenth means and said eighteenth means for tallying the number of times said first master node is identified to obtain a first total and the number of times said second master node is identified to obtain a second total;

if said first total equals said second total, tiebreaking means for choosing between said first master node and said second master node; and,

if said first total does not equal said second total, final master node selection means for selecting said first master node as master node if said first total is greater than said second total and for selecting said second master node as master node if said second total is greater than said first total.

14. (previously presented) The system of claim 13 and wherein said tiebreaking means includes other IP means for picking said first master node as said master node if the IP address of said first master node is lower than the IP address of said second master node and vice versa.

15. (previously presented) The system of claim 13 and wherein said final master node selection means includes demoting means for demoting said first master node to non-master node status as a participating node within said plurality of nodes if said first total is less than said second total, and for demoting said second master node to non-master node status as a participating node within said plurality of nodes if said second total is less than said first total.

16. (previously presented) The system of claim 8 and wherein said fifth means includes means for communicating via said DDB in said first master node to said DDB in each of said all other of said nodes in said plurality.

17. (previously presented) The system of claim 9 and wherein said sixth means includes means for communicating via said DDB in said second master node to said DDB in each of said all other of said nodes in said plurality.

18. (original) The system of claim 1 and wherein said network is globally-dispersed and at least some of said plurality of nodes are located in different time zones from other of said plurality of nodes.

19. (currently amended) In a computer network having a plurality of nodes only one of which should be master node for managing said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, a system for resolving conflict in said network between said first master node and said second master node comprising:

means for choosing between said first master node and said second master node to obtain said master node, to resolve said conflict between said first master node and said second master node.

20. (currently amended) In a computer network having a plurality of nodes only one of which should be master node used to maintain said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a

second master node, a system for resolving conflict in said network between said first master node and said second master node comprising:

means for establishing a standard for comparison between said first master node and said second master node;

means for comparing said first master node against said second master node in accordance with said standard to obtain comparison results; and,

means for selecting said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.

21. (currently amended) In a computer network having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of said DDB in each of said plurality of nodes consistent throughout said plurality in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, a method for resolving conflict in said network between said first master node and said second master node comprising:

establishing a standard for comparison between said first master node and said second master node;

comparing said first master node against said second master node in accordance with said standard to obtain comparison results; and,

selecting said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.

22. (original) The method of claim 21 and further comprising:

demoting the remaining node in said group to non-master node status as a participating node in said plurality of nodes.

23. (original) The method of claim 21 and wherein said comparison standard establishing establishes a temporal standard.

24. (previously presented) The method of claim 23 and wherein said comparing comprises:

choosing between said first master node and said second master node if said first master node and said second master node were selected simultaneously; and,

determining which one of said first master node and said second master node was most recently selected to obtain a most recently selected master node if said first master node and said second master node were not selected simultaneously.

25. (previously presented) The method of claim 24 and wherein said choosing includes picking said first master node if the IP address of said first master node is lower than the IP address of said second master node and vice versa.

26. (previously presented) The method of claim 24 and wherein said determining comprises picking said most recently selected master node as said master node.

27. (previously presented) The method of claim 6 and wherein said picking comprises:

first determining when said first master node was selected master of said network to obtain a first time of selection;

second determining when said second master node was selected said master of said network to obtain a second time of selection;

third comparing said first time with said second time to obtain said most recently selected master node; and,

allowing said most recently selected master node to be said master node and demoting other than said most recently selected master node to non-master-node status as a participating node in said plurality of nodes.

28. (previously presented) The method of claim 27 and wherein said first determining comprises:

recording first master node local time of selection of said first master node as said master node as recorded said first time of selection;

measuring duration of said selection of said first master node to obtain a first selection duration; and,

communicating said first selection duration to all other of said nodes in said plurality.

29. (previously presented) The method of claim 28 and wherein said second determining comprises:

recording second master node local time of selection of said second master node as said master node as recorded said second time of selection;

measuring duration of said selection of said second master node to obtain a second selection duration; and,

communicating said second selection duration to all other of said nodes in said plurality.

30. (previously presented) The method of claim 29 to be practiced within each one of said plurality of nodes other than said first master node and said second master node comprising:

noting local time of receipt of communication of said first selection duration and subtracting said first selection duration from said local time of receipt of said first selection duration to obtain first adjusted local time;

noting local time of receipt of communication of said second selection duration and subtracting said second selection duration from said local time of receipt of said second selection duration to obtain second adjusted local time;

comparing said first adjusted local time and said second adjusted local time to determine most recent adjusted local time; and,

identifying either said first master node or said second master node associated with said most recent adjusted local time.

31. (previously presented) The method of claim 30 to be practiced within said first master node comprising:

noting local time of arrival of said second selection duration and subtracting said second selection duration therefrom to obtain first master node adjusted competitive local time;

comparing said first master node adjusted competitive local time with said first master node local time of selection to obtain a first most recent selection time; and,

identifying either said first master node or said second master node associated with said first most recent selection time.

32. (previously presented) The method of claim 31 to be practiced within said second master node comprising:

noting local time of arrival of said first selection duration and subtracting said first selection duration therefrom to obtain second master node adjusted competitive local time;

comparing said second master node adjusted competitive local time with said second master node local time of selection to obtain a second most recent selection time; and,

identifying either said first master node or said second master node associated with said second most recent selection time.

33. (previously presented) The method of claim 32 comprising:

tallying the number of times said first master node is identified to obtain a first total and the number of times said second master node is identified to obtain a second total;

if said first total equals said second total, tiebreaking by choosing between said first master node and said second master node; and,

if said first total does not equal said second total, final master node selection selecting said first master node as master node if said first total is greater than said second total and selecting said second master node as master node if said second total is greater than said first total.

34. (previously presented) The method of claim 33 and wherein said tiebreaking by choosing includes picking said first master node as said master node if the IP address of said first master node is lower than the IP address of said second master node and vice versa.

35. (previously presented) The method of claim 33 including:

demoting said first master node to non-master node status as a participating node within said plurality of nodes if said first total is less than said second total; and,

demoting said second master node to non-master node status as a participating node within said plurality of nodes if said second total is less than said first total.

36. (previously presented) The method of claim 28 including:

communicating via said DDB in said first master node to said DDB in each of said all other of said nodes in said plurality.

37. (previously presented) The method of claim 29 including:

communicating via said DDB in said second master node to said DDB in each of said all other of said nodes in said plurality.

38. (original) The method of claim 21 and wherein said network is globally-dispersed and at least some of said plurality of nodes are located in different time zones from other of said plurality of nodes.

39. (currently amended) In a computer network having a plurality of nodes only one of which should be master node for managing said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, a method for resolving conflict in said network between said first master node and said second master node comprising:

choosing between said first master node and said second master node to obtain said master node, to resolve said conflict between said first master node and said second master node.

40. (currently amended) In a computer network having a plurality of nodes only one of which should be master node used to maintain said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, a method for resolving conflict in said network between said first master node and said second master node comprising:

establishing a standard for comparison between said first master node and said second master node;

comparing said first master node against said second master node in accordance with said standard to obtain comparison results; and,

selecting said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.

41. (currently amended) A computer program product for use in a computer network having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of said DDB in each of said plurality of nodes consistent throughout said plurality in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, said computer program product including a computer usable medium having computer readable program code thereon for resolving conflict in said network between said first master node and said second master node, said program code comprising:

program code for establishing a standard for comparison between said first master node and said second master node;

program code for comparing said first master node against said second master node in accordance with said standard to obtain comparison results; and,

program code for selecting said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.

42. (previously presented) The computer program product of claim 41 and further comprising:

program code for demoting the remaining node in said group to non-master node status as a participating node in said plurality of nodes.

43. (original) The computer program product of claim 41 and wherein said comparison standard establishing program code establishes a temporal standard.

44. (previously presented) The computer program product of claim 43 and wherein said comparing program code comprises:

program code for choosing between said first master node and said second master node if said first master node and said second master node were selected simultaneously; and,

program code for determining which one of said first master node and said second master node was most recently selected to obtain a most recently selected master

node if said first master node and said second master node were not selected simultaneously.

45. (previously presented) The computer program product of claim 44 and wherein said choosing program code includes IP program code for picking said first master node if the IP address of said first master node is lower than the IP address of said second master node and vice versa.

46. (previously presented) The computer program product of claim 44 and wherein said determining program code comprises program code for picking said most recently selected master node as said master node.

47. (previously presented) The computer program product of claim 46 and wherein said picking program code comprises:

first program code for determining when said first master node was selected master of said network to obtain a first time of selection;

second program code for determining when said second master node was selected said master of said network to obtain a second time of selection;

third program code for comparing said first time with said second time to obtain said most recently selected master node; and,

fourth means, responsive to operation of said third means, for allowing said most recently selected master node to be said master node and for demoting other than said

most recently selected master node to non-master-node status as a participating node in said plurality of nodes.

48. (previously presented) The computer program product of claim 47 and wherein said first program code comprises:

fifth means, included within said first master node for recording first master node local time of selection of said first master node as said master node as recorded said first time of selection, for measuring duration of said selection of said first master node to obtain a first selection duration, and for communicating said first selection duration to all other of said nodes in said plurality.

49. (previously presented) The computer program product of claim 48 and wherein said second program code comprises:

sixth means, included within said second master node for recording second master node local time of selection of said second master node as said master node as recorded said second time of selection, for measuring duration of said selection of said second master node to obtain a second selection duration, and for communicating said second selection duration to all other of said nodes in said plurality.

50. (previously presented) The computer program product of claim 49 and wherein said third program code comprises, for and within each one of said plurality of nodes other than said first master node and said second master node:

seventh means, for noting local time of receipt of communication of said first selection duration and for subtracting said first selection duration from said local time of receipt of said first selection duration to obtain first adjusted local time;

eighth program code for noting local time of receipt of communication of said second selection duration and for subtracting said second selection duration from said local time of receipt of said second selection duration to obtain second adjusted local time;

ninth program code for comparing said first adjusted local time and said second adjusted local time to determine most recent adjusted local time; and,

tenth program code for identifying either said first master node or said second master node associated with said most recent adjusted local time.

51. (previously presented) The computer program product of claim 50 and wherein said third program code further comprises:

eleventh program code located within said first master node comprising;

twelfth program code for noting local time of arrival of said second selection duration and for subtracting said second selection duration therefrom to obtain first master node adjusted competitive local time;

thirteenth program code for comparing said first master node adjusted competitive local time with said first master node local time of selection to obtain a first most recent selection time; and,

fourteenth program code for identifying either said first master node or said second master node associated with said first most recent selection time.

52. (previously presented) The computer program product of claim 51 and wherein said third program code further comprises:

fifteenth program code located within said second master node comprising;

sixteenth program code for noting local time of arrival of said first selection duration and for subtracting said first selection duration therefrom to obtain second master node adjusted competitive local time;

seventeenth program code for comparing said second master node adjusted competitive local time with said second master node local time of selection to obtain a second most recent selection time; and,

eighteenth program code for identifying either said first master node or said second master node associated with said second most recent selection time.

53. (previously presented) The computer program product of claim 52 and further comprising:

summation means, operative with said tenth means, said fourteenth program code and said eighteenth program code for tallying the number of times said first master node is identified to obtain a first total and the number of times said second master node is identified to obtain a second total;

if said first total equals said second total, tiebreaking program code for choosing between said first master node and said second master node; and,

if said first total does not equal said second total, final master node selection program code for selecting said first master node as master node if said first total is greater than said second total and for selecting said second master node as master node if said second total is greater than said first total.

54. (previously presented) The computer program product of claim 53 and wherein said tiebreaking program code includes other IP program code for picking said first master node as said master node if the IP address of said first master node is lower than the IP address of said second master node and vice versa.

55. (previously presented) The computer program product of claim 53 and wherein said final master node selection program code includes demoting program code for demoting said first master node to non-master node status as a participating node within said plurality of nodes if said first total is less than said second total, and for demoting said second master node to non-master node status as a participating node within said plurality of nodes if said second total is less than said first total.

56. (previously presented) The computer program product of claim 48 and wherein said fifth program code includes program code for communicating via said DDB in said first master node to said DDB in each of said all other of said nodes in said plurality.

57. (previously presented) The computer program product of claim 49 and wherein said sixth program code includes program code for communicating via said DDB in said second master node to said DDB in each of said all other of said nodes in said plurality.

58. (original) The computer program product of claim 41 and wherein said network is globally-dispersed and at least some of said plurality of nodes are located in different time zones from other of said plurality of nodes.

59. (currently amended) A computer program product for use in a computer network having a plurality of nodes only one of which should be master node for managing said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, said computer program product including a computer usable medium having computer readable program code thereon for resolving conflict in said network between said first master node and said second master node, said program code comprising:

program code for choosing between said first master node and said second master node to obtain said master node, to resolve said conflict between said first master node and said second master node.

60. (currently amended) A computer program product for use in a computer network having a plurality of nodes only one of which should be master node used to maintain

said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, said computer program product including a computer usable medium having computer readable code thereon for resolving conflict in said network between said first master node and said second master node, said program code comprising:

program code for establishing a standard for comparison between said first master node and said second master node;

program code for comparing said first master node against said second master node in accordance with said standard to obtain comparison results; and,

program code for selecting said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.

61. (currently amended) In a computer network having a plurality of nodes each of which has a DDB and one of which should be master node used to maintain contents of said DDB in each of said plurality of nodes consistent throughout said plurality in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, apparatus for resolving conflict in said network between said first master node and said second master node comprising:

a first device that establishes a standard for comparison between said first master node and said second master node;

a second device that compares said first master node against said second master node in accordance with said standard to obtain comparison results; and,

a third device that selects said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.

62. (currently amended) In a computer network having a plurality of nodes only one of which should be master node for managing said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, apparatus for resolving conflict in said network between said first master node and said second master node comprising:

a device that chooses between said first master node and said second master node to obtain said master node, to resolve said conflict between said first master node and said second master node.

63. (currently amended) In a computer network having a plurality of nodes only one of which should be master node used to maintain said plurality of nodes in a manner to avoid a single point of failure, said plurality of nodes including a first master node and a second master node, apparatus for resolving conflict in said network between said first master node and said second master node comprising:

a first device that establishes a standard for comparison between said first master node and said second master node;

a second device that compares said first master node against said second master node in accordance with said standard to obtain comparison results; and,

a third device that selects said master node from the group of nodes consisting of said first master node and said second master node based on said comparison results, to resolve said conflict between said first master node and said second master node.